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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/925,985	09/09/97	PATRICK R	P0318/LAM1P0

EXAMINER

022434 IM62/1205
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ART UNIT	PAPER NUMBER
1746	14

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Offic Action Summary	Application N . 08/925,985	Applicant(s) PATRICK ET AL.	
	Examiner Alexander Markoff	Art Unit 1746	

-- Th MAILING DATE of this communication appears on th cover sheet with th correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2000* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 2, 4-10 and 25-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 4-10 and 25-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> **The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.**

2. Claims 1, 2, 4-10, and 25-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite because the terms "pure metallic material" and "substantially pure metallic material" is a relative term lacking proper comparative basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> **A person shall be entitled to a patent unless –**
>
> **(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.**

4. Claims 1, 2, 7, 25, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Hills et al (US Patent NO 5,685,914).

Hills et al teach (entire reference) improving the etch uniformity of a plasma process by the use of a ring (124). See at least Fig. 3 and the related description. The ring has a surface, which is even and parallel with the surface of the substrate (110).

The ring surrounds the substrate. The ring is made of the aluminum (column 5, lines 60-66).

The plasma cloud is inside and outside of a ring 114 (see for example Fig.1) and thereby extends beyond an outer periphery of the ring 124.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102((e), f) or (g) prior art under 35 U.S.C. 103(a).

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hills et al (US Patent NO 5,685,914).

Hills et al teach (entire reference) improving the etch uniformity of a plasma process by the use of a ring (124). See at least Fig. 3 and the related description. The ring has a surface, which is even and parallel with the surface of the substrate (110). The ring surrounds the substrate. The ring is made of the aluminum(column 5, lines 60-66).

The plasma cloud is inside and outside of a ring 114 (see for example Fig.1) and thereby extends beyond an outer periphery of the ring 124.

Hills et al do not specifically teach that the ring 124 contacts the substrate. It is not clear if any space is presented between the ring and the substrate.

Hills et al, however, teach that the ring 114, can cause of the trapping of contamination near the substrate periphery (column 1, lines 65-67).

Accordingly, it would have been obvious to an ordinary artisan at the time the invention was made to make the ring 124 which has the inner periphery complimentary to the outer periphery of the substrate in order to eliminate any space where the contamination can be trapped.

9. Claims 4-6, 8-10 26-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hills et al (US Patent NO 5,685,914) in view of Abraham(US Patent NO 5,772,906) and Abraham et al (US Patent NO 5,952,244).

Hills et al teach (entire reference) improving the etch uniformity of a plasma process by the use of a ring (124). See at least Fig. 3 and the related description. The ring has a surface, which is even and parallel with the surface of the substrate (110). The ring surrounds the substrate. The ring is made of the aluminum(column 5, lines 60-66).

The plasma cloud is inside and outside of a ring 114 (see for example Fig.1) and thereby extends beyond an outer periphery of the ring 124.

Hills et al do not recite the specifically claimed type of the plasma apparatus.

However, they do not limit their method to the use of any specific type of the apparatus or any type of the plasma process.

Abraham and Abraham et al teach that the claimed chambers (TCP ™ of Lam Research Corporation) and processes (aluminum etching using chlorine) were conventional in the art.

It would have been obvious to an ordinary artisan at the time the invention was made to expend the teaching of Hills et al to any conventional plasma etching process (including the aluminum etching processes recited by Abraham and Abraham et al) with reasonable expectation of adequate results in order to improve the uniformity of the etching.

Response to Arguments

1. Applicant's arguments filed 9/20/00 have been fully considered but they are not persuasive.

The Applicants argue that the rejection of claims under 35 USC 112(2) is not proper because the term "substantially pure" is definite. The Applicants partially cited MPEP 2173.05(b)(D) to support their statement.

This is not persuasive because the full text of the cited paragraph does not support the statement that the term "substantially" is always definite. Moreover, the term "pure" is relative itself. The combination of "substantially" and "pure" is even more relative than the "pure" alone.

Thereby, the rejection is maintained.

The Applicants argue that the rejection made under 35 USC 102 is not proper because the Examiner did not specifically pointed out the place in the patent where etching of the ring (124) is recited.

This is not persuasive because the steps of the method of Hills et al and the claimed method are the same, it is inherent that the results of this steps would be the same and that the ring would be etched by the plasma at least at some degree.

The Applicants argue that Hills et al teach the use of anodized aluminum and thereby the claims are not anticipated.

This is not persuasive because the claims use relative terms such as "pure", "substantially pure" or use the term "consist essentially of aluminum". None of these terms exclude the use of anodized aluminum. Moreover, the Applicants attention is directed to the fact that any aluminum (even "pure" aluminum) would be covered by a layer of a natural oxide.

The Applicants state that the rejection of claims 5 and 27 is improper because it would not have been obvious to an ordinary artisan to made a focus ring and other parts of the apparatus from a material which would be etched during the plasma process. It is not clear what allows the Applicants to make such statement. However, it appears that such statement contradicts to the teaching of the prior art. See, for example, US Patent 5,330,607, issued to Nowicki, which was discussed in details during the prosecution of the parent Application. A mere statement is not sufficient to overcome the rejection.

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Markoff whose telephone number is 703-308-7545. The examiner can normally be reached on Monday - Friday 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on 703-308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7719 for regular communications and 703-305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Alexander Markoff
Primary Examiner
Art Unit 1746

ALEXANDER MARKOFF
PRIMARY EXAMINER

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December 2, 2000